

09/904,929

015WO76/ALBRP392US

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) An industrial control system interface comprising:
a first interface program executing on a remote computer to provide an interface screen for an industrial controller;
a second interface program executing on a Web server communicating with the remote computer over the Internet and further communicating with an industrial control system controlling an industrial process through input and output data communicated with the industrial process;
the first and second interface program execute to provide a protocol so that the first interface program discovers and instances software objects related to the input and output data and stored on the Web server; the first interface program uses pre-written software objects to implement the interface; and
the protocol provides for at least one persistence instruction that preserves an instance of a software object on the Web server after cessation of a communication session between the remote computer and the Web server.
2. (Previously Presented) The industrial control system interface of claim 1, the protocol provides for the communication of instructions between the first interface program and the second interface program using the SOAP protocol.
3. (Previously Presented) The industrial control system interface of claim 1, multiple instructions are transmitted in a single SOAP protocol message and wherein a call arrangement of the SOAP protocol is selected from the group consisting of sequential, nested, and a combination of both.

09/904,929

015WO76/ALBRP392US

4. (Previously Presented) The industrial control system interface of claim 1, the SOAP protocol provides for a discovery instruction to be transmitted from the first interface program that causes the second interface program to provide characteristics of the software objects.
5. (Previously Presented) The industrial control system interface of claim 4, the characteristics are object properties, object constructors, object methods, and object events.
6. (Previously Presented) The industrial control system interface of claim 1, the protocol provides for a constructor instruction creating an instance of a software object on the Web server.
7. (Previously Presented) The industrial control system interface of claim 1, the protocol provides for a set property instruction setting a property of a software object on the Web server.
8. (Previously Presented) The industrial control system interface of claim 1, the protocol provides for an invocation of a method of a software object on the Web server.
9. (Previously Presented) The industrial control system interface of claim 1, the protocol provides for an event subscription instruction causing the receipt by the first interface program of event messages from software objects on the Web server.
10. (Cancelled)
11. (Previously Presented) The industrial control system interface of claim 1, the first and second interface programs further execute to
connect the remote computer using a Web browser program to a first Web page providing the first interface program;

09/904,929

015WO76/ALBRP392US

read the first interface program into the remote computer and execute it at the remote computer; and

connect the Web browser program to the Web server communicating with the industrial control system.

12. (Previously Presented) The industrial control system interface of claim 1, the software objects are stored on a Web server other than the Web server communicating with the industrial control system.

13. (Previously Presented) The industrial control system interface of claim 1, the first interface program is a Java applet.

14. (Previously Presented) The industrial control system interface of claim 1, the software objects stored on the Web server include graphic display elements.

15. (Previously Presented) The industrial control system interface of claim 1, the software objects stored on the Web server include graphic control elements.

16-20. (Cancelled)

21. (Previously Presented) A method of remote communication with an industrial control system

executing a first interface program on a remote computer to provide an interface screen for an industrial controller;

executing a second interface program on a Web server communicating with the remote computer over the Internet and further communicating with an industrial control system controlling an industrial process through input and output data communicated with the industrial process; and

the first and second interface programs further execute to provide a protocol so that the first interface program may discover and instance software objects related to the input and output data and stored on the Web server, the protocol calls for a persistence

09/904,929

015WO76/ALBRP392US

command that retains a copy of a software object on the Web server after communication between the remote computer and the Web server is terminated; and

the first interface program may use pre-written software objects to implement the interface.

22. (Previously Presented) The method of claim 21, the protocol provides for the communication of instructions between the first interface program and the second interface program using the SOAP protocol.

23. (Previously Presented) The method of claim 21, multiple instructions are transmitted in a single SOAP protocol message and wherein a call arrangement of the SOAP protocol is selected from the group consisting of sequential, nested, and a combination of both.

24. (Previously Presented) The method of claim 21, the SOAP protocol provides for a discovery instruction to be transmitted from the first interface program that causes the second interface program to provide a list of characteristics of the software objects.

25. (Previously Presented) The method of claim 24, the characteristics are object properties, object constructors, object methods and object events.

26. (Previously Presented) The method of claim 21, the protocol provides for a constructor instruction creating an instance of a software object on the Web server.

27. (Previously Presented) The method of claim 21, the protocol provides for an set property instruction setting a property of a software object on the Web server.

28. (Previously Presented) The method of claim 21, the protocol provides for an invocation of a method of a software object on the Web server.

09/904,929

015WO76/ALBRP392US

29. (Previously Presented) The method of claim 21, the protocol provides for an event subscription instruction causing the receipt by the first interface program of event messages from software objects on the Web server.

30. (Cancelled)

31. (Previously Presented) The method of claim 21, including the steps of:
connecting the remote computer via a Web browser program to a first Web page providing the first interface program;
reading the first interface program into the remote computer and executing it at the remote computer; and
connecting the Web browser program to the Web server communicating with the industrial control system.

32. (Previously Presented) The method of claim 21, the software objects are stored on a Web server other than the Web server communicating with the industrial control system.

33. (Previously Presented) The method of claim 21, the first interface program is a Java applet.

34. (Previously Presented) The method of claim 21, the software objects stored on the Web server include graphic display elements.

35. (Previously Presented) The method of claim 21, the software objects stored on the Web server include a graphic control elements.